UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,306	09/18/2003	Michael Smith	CISCP350/8062	7927

22434   7590   11/02/2007
BEYER WEAVER LLP
P.O. BOX 70250
OAKLAND, CA 94612-0250

EXAMINER
ROBERTS, BRIAN S

ART UNIT	PAPER NUMBER
2619	

MAIL DATE	DELIVERY MODE
11/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/666,306	SMITH ET AL.
	Examiner	Art Unit
	Brian Roberts	2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 August 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-37</u> is/are pending in the application.

    4a) Of the above claim(s) <u>33-37</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-32</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>18 September 2007</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

- Applicant's election without traverse of Group 1, claims 1-32 in the reply filed

  on 08/06/2007 is acknowledged.

- Claims 1-32 have been examined.

Specification

1.   The disclosure is objected to because of the following informalities:

- The Cross-Reference to Related Application section of the specification on

  page 1 must be updated.

Appropriate correction is required.

Claim Objections

2.   Claim 14 is objected to because of the following informalities:

- The second period at the end of claim 14 should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
conditions and requirements of this title.

4.   Claims 31-32 rejected under 35 U.S.C. 101 because is directed to non-statutory

subject matter. "A computer program embodied in a machine-readable medium, the

computer program containing instructions for" should read --A computer readable

medium encoded with a computer program for--. See page 52+ of the Interim Guideline.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

6.   Claims 5, and 15-22, rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

-    In reference to claims 5, 15-18, 22

Claim 5, 15-18, and 22 should state that the virtual switch link protocol comprises

a packet containing source port identifier, or a destination port index, etc. rather than

stating the virtual switch link protocol comprises source port identifier, or a destination

port index, etc.

-    In reference claims 19-21

The phrase "the virtual switch link protocol indicates" renders claims 19-21

indefinite. A protocol is a set of rules governing the format of messages that are

exchanged between computers. The "virtual switch link protocol" cannot indicate but

rather the master and slave switch utilize the virtual switch link protocol to indicate.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8.   Claims 14, 23-28 and 30-32 are rejected under 35 U.S.C. 102(e) as being

anticipated by Shinomiya. (US 2003/0037165)

-    In reference to claims 14, 30, 31

In Figure 1, Shinomiya teaches and system and method for forming a virtual

switch (3) from a plurality of physical switches in a network, the method includes

configuring a first physical switch as a master switch (3-1) for controlling the virtual

switch (3); configuring a second physical switch as a slave switch (3-2) under the

control of the master switch; forming a virtual switch link for communication between the

master switch (3-1) and the slave switch (3-2); and causing the master switch (3-1) and

the slave switch (3-2) to communicate via a virtual router redundant protocol (*virtual*

switch link protocol). (paragraphs [0045-0046])

-    In reference to claims 23, 32

In Figure 1, Shinomiya further teaches extending a first data plane of the master

switch (3-1) to include a second data plane of the slave switch (3-2) according to

communication between the master switch and the slave switch via the virtual router

redundant protocol (*virtual switch link protocol*). (paragraphs [0045-0046])

-        In reference to claims 24

    -    In reference to claim 24

In Figure 1, Shinomiya further teaches forming the virtual switch link from a

plurality of physical links acting as a single logical link. (paragraphs [0045-0046])

    -    In reference to claim 25

In Figure 2, Shinomiya further teaches the virtual switch link comprises a control

virtual switch link and a data virtual switch link. (paragraphs [0047-0048])

    -    In reference to claim 26

In Figures 9A-9C, Shinomiya further teaches updating layer 2 forwarding tables

in the master chassis (3-1); updating layer 2 forwarding tables in the slave chassis (3-2);

and correcting inconsistencies between the layer 2 forwarding tables in the master

chassis (3-1) and the layer 2 forwarding tables in the slave chassis (3-2). (paragraphs

[0090-0096]) .

    -    In reference to claim 27

In Figure 2, Shinomiya further teaches forming the virtual switch link comprises

combining the data virtual switch link and the control virtual switch link on a single

physical link. (paragraphs [0047-0048])

- In reference to claim 28

In Figures 9A-9C, Shinomiya further teaches updating layer 2 forwarding tables in the master chassis (3-1); updating layer 2 forwarding tables in the slave chassis (3-2); and correcting inconsistencies between the layer 2 forwarding tables in the master chassis (3-1) and the layer 2 forwarding tables in the slave chassis (3-2) according to frames transmitted on the data virtual switch link. (paragraphs [0090-0096])

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 1-6, 8-11, 13, 15-22, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinomiya. (US 2003/0037165) in view of Walsh et al. (US 2002/0099972).

- In reference to claim 1

In Figure 1, Shinomiya teaches a virtual switch (3) for a network, the virtual switch (3) includes a master chassis (3-1) the slave chassis (3-2) and a virtual switch link for communication between the master chassis (3-1) and the slave chassis (3-2). (paragraphs [0045-0046])

Shinomiya does not explicitly teach that the master chassis (3-1) comprises a

first plurality of linecards; and a master supervisor card for controlling the first plurality of

linecards and that the slave chassis (3-2) under the control of the master supervisor

card comprises a second plurality of linecards; and a slave supervisor card.

In Figure 1, Walsh et al. teaches a router with a first plurality of linecards (108a);

and a master supervisor card (102a)for controlling the first plurality of linecards and a

second plurality of linecards (108b); and a slave supervisor card (102b). (paragraph

[0027])

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to modify the master chassis (3-1) of Shinomiya to include a first plurality

of linecards; and a master supervisor card for controlling the first plurality of linecards as

taught by Walsh et al. and modify the and slave chassis (3-2) of Shinomiya to include a

second plurality of linecards; and a slave supervisor card as taught by Walsh et al.

because it allows each chassis in the virtual switch to receive data over input

communication links and forward data over output communication links as well as

change from utilizing the master chassis to the slave chassis in case there was failure of

the master chassis.

    -   In reference to claim 2

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figure 1, Shinomiya further

teaches the master chassis (3-1) and the slave chassis (3-2) communicate according to

a virtual router redundant protocol (*virtual switch link protocol*) for logically extending a

data plane of the master chassis (3-1) to that of the slave chassis (3-2). (paragraphs

[0045-0046])

- In reference to claim 3

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figure 2, Shinomiya further

teaches the virtual switch link comprises a control virtual switch link and a data virtual

switch link. (paragraphs [0047-0048])

- In reference to claim 4

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figure 2, Shinomiya further

teaches the virtual switch link comprises a plurality of physical links combined to form a

logical link. (paragraphs [0047-0048])

- In reference to claims 5, 15-18, 22, as best understood

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim.

While the combination of Shinomiya and Walsh et al. does not explicitly teach

that the virtual switch link protocol comprises a field indicating whether a packet has

traversed the virtual switch link, a source port identifier, a destination port index, source

flood information, VLAN information, or data plane priority information, official notice is

taken that the above fields are known in the art and are utilized to coordinate the

transfer of packets between network elements and for configuration of the network

elements.

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the system and method of the combination of Shinomiya and Walsh

et al. to include a field indicating whether a packet has traversed the virtual switch link, a

source port identifier, a destination port index, source flood information, or VLAN

information in a packet between Router A and Router B because it allows the

coordination of load balancing between the respective routers and provides for the

routing of packets by a backup router if a master router fails.

-   In reference to claim 6

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figures 9A-9C, Shinomiya

further teaches the virtual switch link is used to synchronize routing tables (32) of the

master chassis (3-1) and the slave chassis (3-2). (paragraphs [0090-0096])

-   In reference to claim 8

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figure 1, Shinomiya further

teaches the data virtual switch link extends an internal chassis data plane to

communication between the master chassis (3-1) and the slave chassis (3-2).

(paragraphs [0045-0046])

- In reference to claim 9

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figure 1, Shinomiya further

teaches the master supervisor communicates with the slave supervisor via inband

messaging on the control virtual switch link. (paragraphs [0045-0046])

- In reference to claim 10

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figure 7, Shinomiya further

teaches the control virtual switch link is brought on-line first and is used to determine

which chassis will be the master chassis (3-1). (paragraph [0076-0079])

- In reference to claim 11

The combination of Shinomiya and Walsh et al. teaches a system and method

that covers substantially all limitations of the parent claim. In Figure 2, Shinomiya further

teaches a single physical link combines the control virtual switch link and the data virtual

switch link. (paragraphs [0047-0048])

- In reference to claim 13

In Figure 1, Shinomiya teaches master chassis (3-1) configured to control a

virtual switch (3) for a network, the master chassis (3-1) and a slave chassis (3-2),

communicating with the slave chassis (3-2) via a virtual switch link protocol that logically

extends a data plane of the master chassis (3-1) to that of the slave chassis (3-2).

(paragraphs [0045-0046])

Shinomiya does not explicitly teach that the master chassis (3-1) comprises a

first plurality of linecards; and a master supervisor card for controlling the first plurality of

linecards and that the slave chassis (3-2) under the control of the master supervisor

card comprises a second plurality of linecards; and a slave supervisor card.

In Figure 1, Walsh et al. teaches a router with a first plurality of linecards (108a);

and a master supervisor card (102a)for controlling the first plurality of linecards and a

second plurality of linecards (108b); and a slave supervisor card (102b). (paragraph

[0027])

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to modify the master chassis (3-1) of Shinomiya to include a first plurality

of linecards; and a master supervisor card for controlling the first plurality of linecards as

taught by Walsh et al. and modify the and slave chassis (3-2) of Shinomiya to include a

second plurality of linecards; and a slave supervisor card as taught by Walsh et al.

because it allows each chassis in the virtual switch to receive data over input

communication links and forward data over output communication links as well as

change from utilizing the master chassis to the slave chassis in case there was failure of

the master chassis.

- In reference to claims 19-21, as best understood, 29

The combination of Shinomiya and Walsh et al. teaches a system and method that covers substantially all limitations of the parent claim.

While the combination of Shinomiya and Walsh et al. does not explicitly teach utilizing a virtual switch link protocol to determine whether an access control list should be applied to a frame, whether a QoS designation should be applied to a frame, or whether a frame is a MAC notification frame, official notice is taken that the above fields are known in the art and are utilized to coordinate the transfer of packets between network elements and for configuration of the network elements.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and method of the combination of Shinomiya and Walsh et al. to include utilizing a virtual switch link protocol to determine whether an access control list should be applied to a frame, whether a QoS designation should be applied to a frame, or whether a frame is a MAC notification frame, between Router A and Router B because it allows the coordination of load balancing between the respective routers and provides for the routing of packets by a backup router if a master router fails.

11.   Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinomiya (US 2003/0037165) in view of Walsh et al. (US 2002/0099972), as applied to the parent claim, and further in view of Kanekar (US 6751191).

- In reference to claims 7 and 12

The combination of Shinomiya and Walsh et al. teaches a system and method

that teaches substantially all limitations of the parent claims.

The combination of Shinomiya and Walsh et al. does not teach an internal out of

band channel to communicate between the master chassis and the slave chassis or

forming the data and control channels through separate physical links.

In Figure 3, Kanekar et al. teaches utilizing a separate control link (208) and data

link (214) between a master chassis (202) and a slave chassis (204). (column 5 line 61

– column 6 line 20)

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the system and method of the combination of Shinomiya and Walsh

et al. to include utilizing an internal out of band channel to communicate between the

master chassis and the slave chassis or forming the data and control channels through

separate physical links as taught by Kanekar et al. because it allows data and control

information to be sent over separate links and increase the bandwidth available for

transmitting control and data information between the master chassis and slave chassis.

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure are:

- Giraud et al. (US 20003/0093557) teaches a method of forwarding IP packets

  for routing protocols.

13.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 10:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/22/07

WING CHAN
SUPERVISORY PATENT EXAMINER

BSR
10/14/2007